

Questions page 89

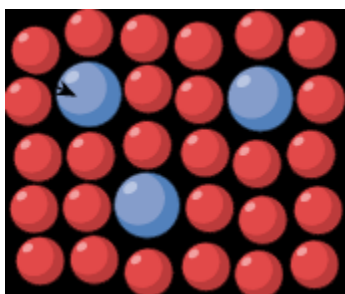
1. Which property is responsible for making copper wires?

Ductility

2. Use the data in table 2.3.3 to explain which material you would use on the end of a drill.

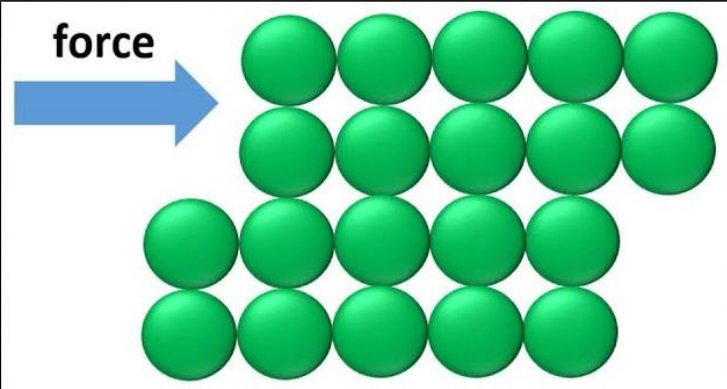
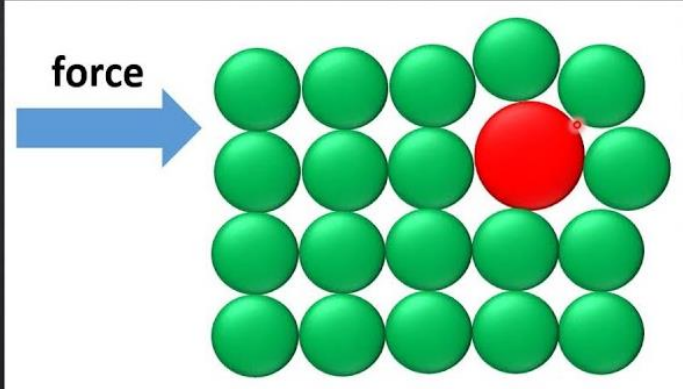
Diamond is the hardest material; and will be able to drill through any material.

3. Duralumin is an alloy made from 96 per cent aluminum (very light) and 4 percent copper (heavy). What might the particle model look like?



4. Use the particle model to explain why some alloys are less ductile than the metals they are made from.

The arrangement of particles in an alloy does not allow for smooth layers which makes it harder to pull the metal into wires.

pure metal	alloy
 A diagram showing four layers of green spheres. A blue arrow labeled 'force' points to the right. The top layer has shifted to the right relative to the other layers, illustrating that layers can slide over each other.	 A diagram showing four layers of green spheres. One sphere in the second layer from the top is red. A blue arrow labeled 'force' points to the right. The layers are not sliding, illustrating that the presence of different metal atoms hinders the sliding process.
In a pure metal the layers can slide over each other.	The presence of different metal atoms means the layers cannot slide over each other as easily.